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IUF
LEIBNIZ-INSTITUT FÜR UMWELT-MEDIZINISCHE FORSCHUNG

The IUF – Leibniz Research Institute for Environmental Medicine investigates the molecular mechanisms through which particles, radiation and environmental chemicals harm human health. The main working areas are environmentally induced aging of the cardiopulmonar system and the skin as well as disturbances of the nervous and immune system. Through development of novel model systems the IUF contributes to the improvement of risk assessment and the identification of novel strategies for the prevention / therapy of environmentally induced health damage. The working group of Prof. Charlotte Esser "The role of AHR in immunotoxicology" at the IUF - Leibniz Research Institute for Environmental Medicine in Düsseldorf is offering a

Master Thesis
Topic: *Analysis of the interplay between gut epithelial cells and inflammation*

The Esser-Lab investigates the functional relevance of the *aryl hydrocarbon receptor (AHR) signaling* pathway in barrier integrity, in particular with respect to inflammation and immunity. We want to identify basic mechanisms of interaction with environmental stressors, optimally leading to the identification of preventive or therapeutical potential of such mechanisms.

The master thesis will be in the context of a DFG project *"Effects of AHR ligands on the gut microbiome, immune-mediated barrier function and metabolism*". The thesis will comprise analysis of the effects of environmental pollutants on mouse blood and gut **tissue structure and functionality** on the molecular level. Methods will include, but will be not limited to, immunohistochemistry, histology, ELISA, quantitative gene expression analysis, Western Blots, image analysis and more, depending on where the questions you ask and answers you get take you.

We offer a very friendly and inspiring work atmosphere in an interdisciplinary institute with immunologists, toxicologists, cell biologists and physicians. Lab meetings and journal clubs are held weekly, and attending seminars of wider interest is encouraged.

We look for a highly motivated master student (m/f/d) willing to work with tissue samples of mice, ideally with a background and experimental experience in molecular biology, cell biology or toxicology, and hands-on-experience with at least some of the techniques listed above. You should be a team player, organized and self-motivated, and enthusiastic about science. You will need at least basic communication skills in English. Interest and some knowledge in bioinformatics is a plus.

Please send your application as one PDF file incl. cover/motivation and your CV to charlotte.esser@iuf-duesseldorf.de

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